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Sumas Mountain Asbestos Update - October 2011



Region 10

October 2011

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This update summarizes work being done by federal, state, and local agencies to manage risks from the naturally occurring asbestos in Swift Creek and the Sumas River.

Swift Creek and the Sumas River contain high levels of naturally occurring asbestos. The asbestos comes from an active landslide on Sumas Mountain, which erodes into the headwaters of Swift Creek. Asbestos is carried downstream in Swift Creek and further downstream into the Sumas River. Sediment dredged from these waterways, as well as sediment deposited in areas affected by flooding, contains asbestos.

Asbestos in the sediment becomes airborne as the sediment dries and people dig, rake, or move the material. Asbestos also becomes airborne when people disturb the ground by walking, cycling, or riding horses on the creek banks, dredge piles or flood deposits. Airborne asbestos fibers can be breathed into the lungs. Significant exposure to these fibers can damage the lungs, increasing the risk of asbestos related diseases such as lung cancer, mesothelioma, or asbestosis.

Federal, state, and local agencies have worked to manage and study the Swift Creek landslide and sediment for some time. Over 100,000 cubic yards of asbestos contaminated sediments erode into Swift Creek and the Sumas River annually. The slide will continue to release material into the Swift Creek watershed each year for an estimated 400 years.

In this update, you will find information about what agencies are working on related to Swift Creek and Sumas River and recommendations from the Whatcom County Health Department and Washington Department of Health to help you reduce your potential exposure to asbestos.

Sediment Management

In the past, dredging and storing sediment from the creek was the main approach for managing the sediment. Unfortunately, sediment storage areas along the stream bank are full, no new storage areas exist, and the cost of hauling sediments away is prohibitive.

Whatcom County recently developed a Swift Creek Management Plan, which describes a proposed management solution for the asbestos-contaminated sediments and flooding. The ultimate goals are to:

- Capture and contain sediment near the landslide
- Manage sediment
- Control flooding
- Reduce the risk to the public

The first phase of the plan involves building sediment control structures on Swift Creek. These will help prevent flooding and will reduce transport and deposition of sediment from the Sumas Mountain landslide. The sediment control structures are designed to manage the sediment in the upper part of Swift Creek and significantly reduce the amount of sediment moving downstream. Sediment control structures include setback levees and sediment basins to capture sediment. The sediment management plan can be reviewed at <http://bit.ly/sy6ppn>

Currently, Whatcom County is conducting a study called an Environmental Impact Statement (EIS), under the State Environmental Policy Act, to assess the environmental impact of the proposed Swift Creek Management Plan. The EIS and completion of the design are necessary before the plans can go forward, and funding for all phases of the work is being sought by the county.

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USGS Monitoring

USGS has established monitoring stations at three locations, in order to develop a detailed understanding of the movement of asbestos in the Swift Creek and Sumas River watershed.

EPA's Recent Studies Support Continuing Steps to Reduce Exposures

EPA sampling in 2009 found asbestos-containing sediments in Sumas River water, banks, and upland flood deposits. Many properties along the river are residences or farms. EPA and the health agencies were concerned that asbestos fibers could become airborne when people disturb soil in areas of their yards or farms that have been flooded. In August 2010, EPA performed activity-based sampling to measure asbestos fibers in air and to estimate the risk from such activities. The sampling was done in August because this is the time of year when the soils are drier and asbestos fibers, if present, would more likely become airborne if disturbed. EPA staff also collected soil samples and water samples from the Sumas River.

Activity-based Sampling

EPA workers wearing respiratory protection performed farming, yard work, and recreational activities, while a pump and filter in their "breathing zone" collected samples of airborne asbestos. The tests showed that:

- Fibers were present in the breathing zone of the EPA workers at all of the locations and during all of the activities.
- The highest levels were present when the workers shoveled and moved the flood deposits on a hot and dry day in an enclosed area.

Soil Sampling

Soil samples were collected from the same places where EPA did activity-based sampling. The key findings were that:

- Concentrations of asbestos in the areas where the team sampled ranged from less than 1% to about 14%.
- Some metals including chromium, magnesium, nickel and vanadium were elevated in the flood deposits.

Water Sampling

Water from the Sumas River next to the three properties was tested for asbestos and metals. Asbestos is primarily a problem when inhaled. Asbestos in water is not a direct concern for inhalation, but when the water is gone, the asbestos left behind can become airborne. The results show the following:

- Asbestos fibers were found in all water samples.
- May 2009 samples had levels of asbestos about 100 times higher than the August 2010 samples.

The conclusion is that during periods of high water, asbestos levels in water are very high, explaining why flooding left behind high levels of asbestos along the Sumas River. During summer low-flow conditions, the river carries less asbestos. During times when Sumas River water may be used for irrigation, asbestos is at lower levels but is still present.

Cancer Risk from Exposure to Sumas Mountain Sediments

EPA tests to date show that asbestos was left in soil where flooding occurred in 2009, and that the asbestos can get into the air and be inhaled by people disturbing the soil. Asbestos inhalation increases the risk of lung cancer. Certain activities – disturbing dry soil in dry weather, especially inside sheds or barns--and certain locations where Sumas Mountain material is concentrated, such as flooded areas or piles--pose greater health risks than others.

- EPA found that for some activities, over a lifetime, the estimated cancer risk was increased by greater than 1 in 10,000, which is the level that generally triggers EPA regulatory action when asbestos is found at hazardous waste sites.
- For the more intense soil disturbing activities, such as spreading or moving dry material indoors, estimated risks were greater than 1 in 1,000.

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Cancer Risk from Exposure to Sediments*Continued*

- In areas where asbestos concentrations were lower, or when rain, humidity, or wet soil reduced the amount of airborne asbestos, the risks, while lower, were still at levels of health concern.

EPA's 2010 sampling efforts reinforce earlier findings that exposures to asbestos can occur when asbestos-containing sediments are disturbed.

EPA Testing Near South Pass Road

For a week this July, researchers conducted field work at the property next to Oat Coles and South Pass road. The researchers have been developing equipment for field sampling and lab analysis that could be more cost-effective than current methods. The research involves testing the equipment at a number of areas around the country where asbestos is an issue.

What about areas further from Swift Creek and the Sumas River?

While we can't describe the cancer risk from every location and activity, we recommend that people minimize their activities in areas where there is material from Sumas Mountain – either dredged piles, dredged material used for paths, fill or projects, or areas that have been flooded in the past. There are some questions we hope to answer soon:

- How far from the river has the asbestos been carried over the years—through flooding or human activity?
- Does wind carry asbestos from areas near the river to where people may be exposed?
- Where flooding left material from the Sumas River on roads, does vehicle traffic stir up asbestos at levels of concern for drivers, pedestrians, or people in buildings near roads?

The Agency for Toxic Substances and Disease Registry, ATSDR, is working with the County and State health agencies to answer some of these questions. ATSDR will test air at selected outdoor locations during a variety of weather conditions. Sampling equipment will be set up by the end of November, and agency staff will collect samples over the course of a year.

As the samples are tested, the health agencies will share information with the public. Until then, people should continue to take precautions to minimize their risk.

What about my home and workplace?

People may also have questions specific to asbestos exposure at their home or at work.

- Am I exposed to asbestos at home because people or animals have tracked it indoors?
- Is there asbestos in material used in my yard or driveway?
- Have animals or people tracked asbestos into my vehicle?
- Am I doing work that could disturb soil with Sumas Mountain asbestos?

The Northwest Clean Air Agency (NWCAA) may be able to take samples of dust or test the air in your house, and they can assist you in determining how to test, clean, or protect your living space. For workplace concerns, the Washington Department of Labor and Industries can work with employers to do voluntary consultations and can respond confidentially to employee requests for testing.

How do I reduce exposure to Sumas Mountain asbestos on my property?

Recent study results are consistent with past studies. You should continue to follow the same steps to reduce your potential exposure.

Residents and farm workers should avoid contact with sediments from Swift Creek or the Sumas River. If there are sediments from Swift Creek or the Sumas River on your property, your family, workers, and visitors should consider taking the following steps to reduce exposure to asbestos:

- Do not use the sediments in outbuildings (indoor horse arenas, garages, barns, and sheds) or at any outdoor location where the material could be disturbed (driveways, gardens, and outdoor horse arenas). Asbestos-containing sediments used in these places can dry and release asbestos fibers into the air when disturbed.

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How to Reduce Exposure to Sumas Mountain Asbestos on My Property?

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- Pave or cover flood deposits with asbestos-free soil or landscape covering. The cover should be thick enough to prevent disturbance of asbestos-contaminated sediment during routine uses or activities.
- Cover known asbestos-containing sediments in gardens and yards with asbestos-free soil or landscape covering. The cover should be thick enough to prevent disturbance of asbestos-contaminated soil during routine uses or activities. If left uncovered, pre-wet gardens and yards before digging, shoveling, or disturbing the soil.
- Pre-wet sediments in agricultural areas before digging, shoveling, or disturbing the soil.
- If you need to move asbestos-containing sediments, wet the material first. This will help prevent the asbestos fibers from becoming airborne.
- Keep pets out of areas where asbestos-containing material may be present. This will keep them from carrying asbestos-containing dust or dirt into the home. The material is usually carried in on the fur of their feet. If pets do get dirty, bathe them. Brushing can release fibers into the air.
- Remove shoes before entering homes or other buildings to prevent tracking-in dirt.
- Use doormats to lower the amount of soil that is tracked into the home.
- Keep windows and doors closed on windy days and during times when construction is occurring nearby.
- Use a wet rag to dust instead of a dry rag or duster.
- Use a wet mop on non-carpeted floors.
- Use area rugs that you can wash regularly.
- Vacuum carpets often using a vacuum with a high efficiency HEPA filter.
- Install a HEPA quality filter in forced air furnace systems.

Questions?

If you have questions about the **activity-based sampling effort**, please contact:

Ellie Hale

U.S. Environmental Protection Agency (EPA)
(206) 553-1215 or (800) 424-4372 ext. 1215

E-mail hale.ellie@epa.gov

If you have questions about the fixed-station air sampling effort, please contact:

Karen L. Larson, Ph.D.

Agency for Toxic Substances and Disease Registry
(ATSDR)

E-mail KXL5@cdc.gov
(206) 553-6978

To learn more about the **air quality** around your home and inquire about **indoor air sampling**, please contact:

Mark Asmundson

Northwest Clean Air Agency
(800) 622-4627 ext. 0

E-mail masmundson@nwcleanair.org

For information about how to **minimize exposure** to naturally occurring asbestos **in the workplace**, please contact:

Larry Gore

Washington Department of Labor and Industries
(360) 902-5514

E-mail gore235@lni.wa.gov

For general questions about Sumas Mountain asbestos, please contact your local health department:

Jeff Hegedus

Whatcom County Health Department
(360) 676-6724 ext. 50895

E-mail jhegedus@co.whatcom.wa.us

If you need materials in an **alternative format**, please contact Caryn Sengupta at (206) 553-1275

TTY users please call the Federal Relay Service:
(800) 877-8339

Swift Creek and Sumas River Flooding Fact Sheet

Steps you can take to reduce your family's exposure to airborne asbestos



Revised October, 2011

The Sumas Mountain landslide, near the headwaters of Swift Creek, releases up to 120,000 cubic yards of sediment into Swift Creek each year. The landslide material contains natural deposits of asbestos. Swift Creek joins the Sumas River near the town of Nooksack. The Sumas River continues north past the town of Sumas and into Canada.

Swift Creek and Sumas River contain asbestos

- ◆ Floodwaters from the creek and river leave behind deposits that contain asbestos.
- ◆ Individual asbestos fibers are too small to see.

Before flooding —

- ◆ Use sandbags to reduce the possibility of flood water from reaching the living area of your property or your house.
- ◆ Do not fill sandbags with materials from the river.

After flooding —

- ◆ Avoid handling flood deposits
- ◆ If you *must* handle flood deposits, wet them down before you dig into or move them.
- ◆ Dried river mud is more likely to release asbestos fibers into the air than wet mud.

- Use a hose to flush the material off of your driveway or walkway into an area where people will not contact it.
- Do not use fans to dry out the soil or sediment.
- Do not sweep the material when it is dry. This can stir up the asbestos fibers.
- ◆ When working with the flood deposits, wear a disposable work suit (available in most hardware stores) or coveralls that can be taken off and kept outside.
- ◆ Use respiratory protection (see below) when you spend time in areas that have been flooded, or where material containing asbestos may be disturbed.
- ◆ Rinse off your shoes after walking in areas with flood deposits.
- ◆ Remove your shoes prior to entering your home or vehicle so that you do not track in small fibers.
- ◆ Double bag any contaminated materials, such as work suits or gloves, before disposing of them.

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Protect your lungs

Do not rely on dust masks or surgical masks

These will not remove asbestos from the air you breathe.

Whenever you move or disturb material deposited by Swift Creek and Sumas River flooding, we recommend that you **use a respirator and filter cartridges specifically designed to filter asbestos from the air you breathe.**

Look for a NIOSH/MSHA certified half-face respirator equipped with a pair of HEPA filter cartridges (color coded purple) with N-100, P-100, or R-100 NIOSH rating.

To be effective, your respirator must be properly selected, fitted, and used. The respirator must fit your head and face snugly (beards, long mustaches, and stubble allow unfiltered air to leak into the respirator and should be shaved before respirator use). Use the respirator all the time you are working in an area where you know or suspect asbestos is present.

Reusable half-face respirators and HEPA filter cartridges can be purchased from a reputable safety equipment store and from some hardware stores. For example, Sanderson's Safety Supply has suitable respirators from \$12 to \$25 and HEPA filters around \$10.

- Look for NIOSH certification and N-100, P-100, or R-100 on the filter label.
- Ask the sales person for a fit test to ensure that the respirator will keep out unfiltered air.



- Ask the sales person to demonstrate how to check for a good face seal before each use.
- Follow the use, cleaning, and care instructions provided with the respirator.

NOTE: Persons employed for hire that may work with asbestos-containing materials, such as sediment from Swift Creek and Sumas River, are subject to additional occupational health and safety requirements and procedures. For workplace questions, please contact Washington State Labor and Industries

☎ Larry Gore (360) 902-5514 or ✉ gore.235@lni.wa.gov

Cleaning your home

If you suspect tracked dirt or mud from a flooded area into your home

- ◆ Consider having a certified asbestos abatement (removal) contractor clean your home. These contractors use a special HEPA vacuum to clean up contaminated material.
- ◆ Use a wet cloth for dusting rather than a dry cloth or feather duster.
- ◆ Wash or vacuum your carpets and curtains using a vacuum with a high efficiency HEPA filter.

Stop flood deposits from entering your home

- Pave or cover walkways, driveways, or roadways affected by or made of material from Swift Creek or Sumas River. The cover should be thick enough to prevent asbestos-contaminated soil from being disturbed during everyday activities.
- Cover Swift Creek or Sumas River deposits in gardens and yards with asbestos-free soil or landscape covering. The cover should be thick enough to prevent asbestos-contaminated soil from being disturbed during everyday use.
- Wet your garden or agricultural areas before digging, shoveling, or disturbing the soil.
- Try to keep pets from carrying dust or dirt into the home on their fur or paws by keeping them out of areas where asbestos may be present.
- When pets do get dirty, bathe them. Remember, brushing the dirt off will release asbestos fibers into the air.

- Remove shoes before entering homes or other buildings to avoid tracking in dirt.
- Use doormats to lower the amount of dirt tracked inside.
- Keep windows and doors closed on windy days and when construction or roadwork is being done nearby.
- Consider wearing coveralls or other work clothes while gardening. Remove coveralls and wash up outside.

Cleaning techniques for reducing exposure to asbestos

- Use a wet rag instead of a dry rag or duster.
- Use a wet mop on non-carpeted floors.
- Use washable area rugs on floors and wash them regularly.
- Vacuum carpets often using a vacuum with a high efficiency HEPA filter.
- Install a HEPA quality filter in forced air furnace systems.

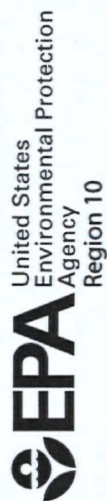
For more information

If you have additional questions about these recommendations please contact Julie Wroble at (206) 553-1079

✉ wroble.julie@epa.gov

or Dave Blake at the Northwest Clean Air Agency at (360) 428-1617 ext. 212

✉ dave@nwcleanair.org



1200 Sixth Avenue, Suite 900, ETPA-081
Seattle, Washington 98101-3140
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*Sumas Mountain Asbestos Update and
Flooding Fact Sheet for Residents*

Read inside for details

Sumas Mountain Asbestos Update and Flooding Fact Sheet for Residents

Look Inside for

- *Updates on sampling and flood controls*
- *Steps you can take to reduce your family's exposure to airborne asbestos*

Learn More on the Web

Whatcom County Health Department Website

[www.co.whatcom.wa.us/health/environmental/
solidwaste/asbestos_swift_creek.jsp](http://www.co.whatcom.wa.us/health/environmental/solidwaste/asbestos_swift_creek.jsp)

EPA Sumas Mountain Information

www.epa.gov/region10/asbestos/sumasmountain.html

Health Information

www.arb.ca.gov/toxics/asbestos/1health.pdf

Ways to Control Naturally Occurring Asbestos Dust

www.arb.ca.gov/toxics/asbestos/3control.pdf

Naturally-Occurring Asbestos Around Your Home

www.arb.ca.gov/toxics/asbestos/4home.pdf